



# SEQUENCE LISTING

<110> Finn, John  
MacLachlan, Ian  
Protiva Biotherapeutics Inc.

<120> Autogene Nucleic Acids Encoding a  
Secretable RNA Polymerase

<130> 020801-000320US

<140> US 10/688,299  
<141> 2003-10-16

<150> US 60/287,974  
<151> 2001-04-30

<150> US 10/136,738  
<151> 2002-04-30

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    <220>
    <223> HIV-Tat variant secretion domain

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    <210> 7
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    <220>
    <223> HIV-Tat variant secretion domain

    <400> 7
Tyr Ala Ala Ala Ala Arg Arg Arg Arg Arg Arg
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    <210> 8
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    <220>
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Glu Arg Pro Arg Ala Pro Ala Arg Ser Ala Ser Arg Pro Arg Arg Pro
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Val Glu

<210> 10
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<212> PRT
<213> Artificial Sequence

<220>
<223> Antennapedia homeodomain third helix (residues
43-58), Penetratin-1 secretion domain

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Arg Gln Ile Lys Ile Trp Phe Gln Asn Arg Arg Met Lys Trp Lys Lys
1          5          10          15

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<220>
<223> Antennapedia homeodomain third helix (residues
53-43) secretion domain

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1          5          10          15

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<220>
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43-58), Pro50 secretion domain

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1          5          10          15

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 43-58), 3-Pro secretion domain  
  
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 43-58), R52M/M54R secretion domain  
  
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 43-58), 7-Arg secretion domain  
  
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 <223> Kaposi's fibroblast growth factor (FGF) signal  
 peptide sequence, truncated secretion domain

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 1 5 10 15

<210> 19  
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<220>  
 <223> amino terminal secretory signal of human IL-2  
 secretion domain

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 1 5 10 15  
 Val Thr Asn Ser  
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<210> 20  
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<220>  
 <223> IL-2-4 cytokine signal sequence secretion domain

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 Val Thr Asn Ser  
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<220>  
 <223> herpes simplex virus (HSV) VP22 sequence secretion  
 domain

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 20 25 30  
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 35 40 45  
 Ser Arg Gln Arg Gly Glu Val Arg Phe Val Gln Tyr Asp Glu Ser Asp  
 50 55 60  
 Tyr Ala Leu Tyr Gly Gly Ser Ser Ser Glu Asp Asp Glu His Pro Glu  
 65 70 75 80  
 Val Lys Arg Thr Arg Arg Lys Val Ser Gly Ala Val Leu Ser Gly Lys  
 85 90 95  
 Gly Lys Ala Arg Ala Lys Lys Lys Lys Ala Gly Ser Gly Gly Ala Gly  
 100 105 110  
 Arg Thr Lys Thr Thr Ala Lys Arg Ala Lys Arg Thr Gln Arg Val Ala  
 115 120 125  
 Thr Lys Ala Lys Ala Ala Lys Ala Ala Glu Thr Thr Arg Gly Arg Lys  
 130 135 140

Ser Ala Gln Lys Glu Ser Ala Ala Leu Lys Asp Ala Lys Ala Ser Thr  
 145 150 155 160  
 Ala Lys Thr Arg Ser Lys Thr Lys Ala Gln Gly Leu Ala Arg Lys Leu  
 165 170 175  
 His Phe Ser Thr Ala Lys Lys Asn Lys Asp Ala Lys Trp Thr Lys Arg  
 180 185 190  
 Val Ala Gly Phe Asn Lys Arg Val Phe Cys Ala Ala Val Gly Arg Leu  
 195 200 205  
 Ala Ala Met His Ala Arg Met Ala Ala Val Gln Leu Trp Asp Met Ser  
 210 215 220  
 Arg Lys Arg Thr Asp Glu Asp Leu Asn Glu Leu Leu Gly Ile Thr Thr  
 225 230 235 240  
 Ile Arg Val Thr Val Cys Glu Gly Lys Asn Leu Leu Gln Arg Ala Asn  
 245 250 255  
 Glu Leu Val Asn Lys Asp Val Val Gln Asp Val Asp Ala Ala Thr Ala  
 260 265 270  
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 Lys Ala Arg Ser Ala Ser Arg Lys Arg Arg Lys Val Glu Ser  
 290 295 300

<210> 22  
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 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> T7 RNA polymerase (RNAP) phagemid promoter  
 sequence

<400> 22  
 taatacgact cactataggg aga 23

<210> 23  
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 <223> SP6 RNA polymerase (RNAP) phagemid promoter  
 sequence

<400> 23  
 atttagtgta cactatagaa gaa 23

<210> 24  
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 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> T3 RNA polymerase (RNAP) phagemid promoter  
 sequence

<400> 24  
 aattaaccct cactaaaggg aga 23

<210> 25  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

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<220>
<223> K11 RNA polymerase (RNAP) phagemid promoter
        sequence

<400> 25
aattaggggca cactataggg aga

<210> 26
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<220>
<223> IL-4 signal sequence secretion domain

<400> 26
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 1          5          10          15
Cys Ala Gly Asn Phe Val His Gly
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<210> 27
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<212> PRT
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<220>
<223> herpes simplex virus (HSV) VP22 secretion domain

<400> 27
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 1          5          10          15
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          20          25          30
Pro Asp Ser Pro Pro Asp Thr Ser Arg Arg Gly Ala Leu Gln Thr Arg
          35          40          45
Ser Arg Gln Arg Gly Glu Val Arg Phe Val Gln Tyr Asp Glu Ser Asp
          50          55          60
Tyr Ala Leu Tyr Gly Gly Ser Ser Ser Glu Asp Asp Glu His Pro Glu
          65          70          75          80
Val Pro Arg Thr Arg Arg Pro Val Ser Gly Ala Val Leu Ser Gly Pro
          85          90          95
Gly Pro Ala Arg Ala Pro Pro Pro Pro Ala Gly Ser Gly Gly Ala Gly
          100          105          110
Arg Thr Pro Thr Thr Ala Pro Arg Ala Pro Arg Thr Gln Arg Val Ala
          115          120          125
Thr Lys Ala Pro Ala Ala Pro Ala Ala Glu Thr Thr Arg Gly Arg Lys
          130          135          140
Ser Ala Gln Pro Glu Ser Ala Ala Leu Pro Asp Ala Pro Ala Ser Thr
          145          150          155          160
Ala Pro Thr Arg Ser Lys Thr Pro Ala Gln Gly Leu Ala Arg Lys Leu
          165          170          175
His Phe Ser Thr Ala Pro Pro Asn Pro Asp Ala Pro Trp Thr Pro Arg
          180          185          190
Val Ala Gly Phe Asn Lys Arg Val Phe Cys Ala Ala Val Gly Arg Leu
          195          200          205
Ala Ala Met His Ala Arg Met Ala Ala Val Gln Leu Trp Asp Met Ser
          210          215          220
Arg Pro Arg Thr Asp Glu Asp Leu Asn Glu Leu Leu Gly Ile Thr Thr
          225          230          235          240

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			260					265					270		
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<220>

<223> artificial secretion domain

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<223> artificial secretion domain

<400> 29

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<220>

<223> artificial secretion domain

<400> 30

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<220>

<223> artificial secretion domain

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<212> PRT

<213> Artificial Sequence



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    <220>
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1           5           10

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    <220>
    <223> artificial secretion domain

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1           5           10

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    <220>
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1           5           10

    <210> 35
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    <220>
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    <400> 35
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1           5           10

    <210> 36
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    <220>
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    <400> 36
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1           5           10

    <210> 37
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    <220>
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 1             5             10             15

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    <220>
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    <400> 38
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 1             5             10             15

    <210> 39
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    <220>
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    <400> 39
Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Gly
 1             5             10             15
Cys

    <210> 40
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    <220>
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    <400> 40
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 1             5             10             15
Gly Cys

    <210> 41
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    <220>
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    <400> 41
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 1             5             10             15
Arg Gly Cys

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 <210> 44  
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 <220>  
 <223> artificial secretion domain  
  
 <400> 44  
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 1 5 10 15  
 Arg Arg Arg Arg Gly Cys  
 20  
  
 <210> 45  
 <211> 22  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Kaposi's fibroblast growth factor (FGF) signal  
 peptide sequence - full length secretion domain  
  
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 Leu Ala Leu Leu Ala Pro  
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<220>  
 <223> R011 bi-cistronic plasmid autogene construct (R023  
 with downstream Photinus pyralis luciferase  
 reporter gene cassette from L059)

<220>  
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 <222> (1444)...(1447)  
 <223> n = g, a, c or t

<400> 46

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<210> 48

<211> 5313

<212> DNA

<213> Artificial Sequence



<220>

<223> L059 luciferase reporter gene construct plasmid,  
pTRI-Amp (Ambion) backbone with EMCV internal  
ribosome entry site (IRES), Photinus pyralis  
luciferase and beta-globin poly-adenylation site  
derived from EMC-Luc

<400> 48

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<210> 49

<211> 7940

<212> DNA

<213> Artificial Sequence

<220>

<223> R023 basic autogene cassette plasmid construct,  
driven by CMV promoter and intron, derived from  
plasmid T7-G1, containing T7 RNAP gene with  
nuclear localization sequence removed, driven by  
T7, T3 and SP6 promoters (PTRI)

<220>

<221> modified\_base

<222> (1444)...(1447)

<223> n = g, a, c or t

<400> 49

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<220>

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